

Trend Study 9-18-00

Study site name: Gooseberry Spring.

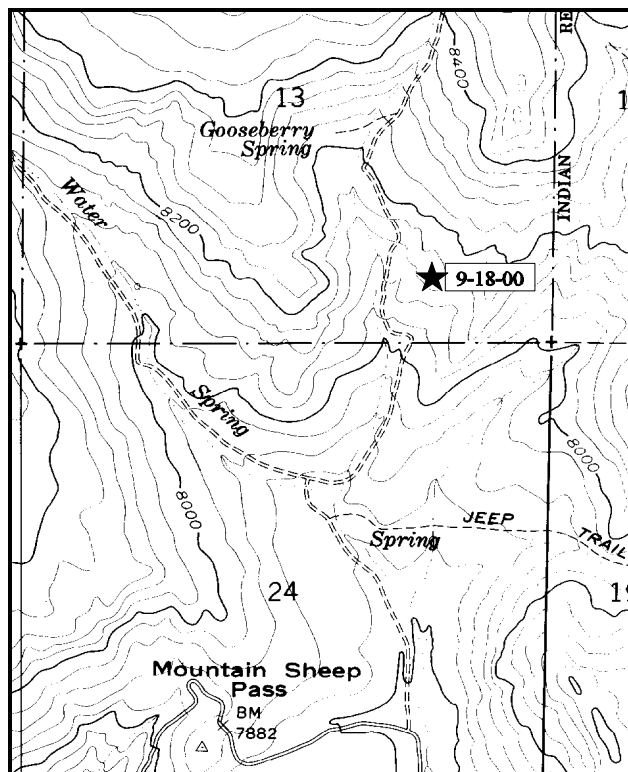
Range type: Mixed Mountain Brush

Compass bearing: frequency baseline 47°M.

First frame placement on frequency belts 5 feet. Frequency belt placement; line 1 (16 & 92ft), line 2 (30ft), line 3 (47ft), line 4 (66ft).

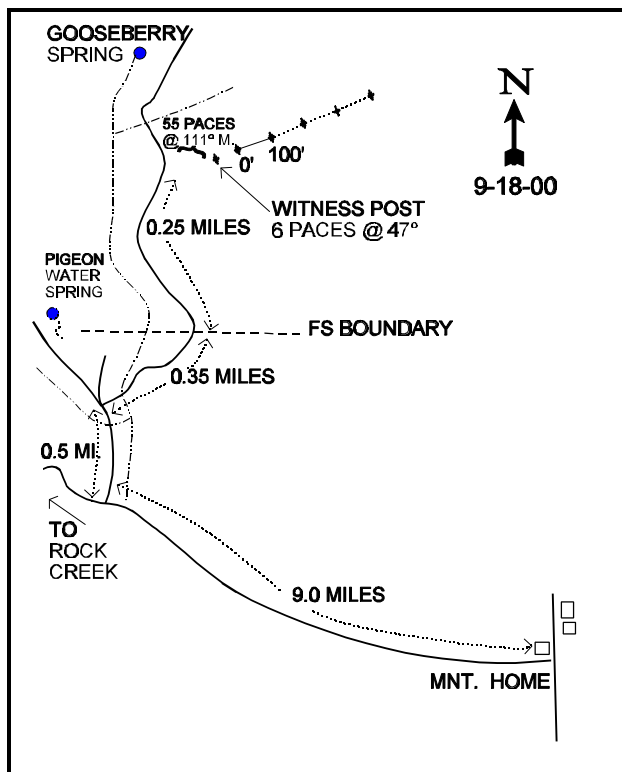
LOCATION DESCRIPTION

From the town of Mountain Home, travel in a northwest direction towards Rock Creek. Approximately 9.0 miles from Mountain Home, you will come to a dirt road to the right (north). Before the road, there is a sign which points to Pigeon Water Spring. Take the dirt road to the north for 0.5 miles to a 3-way fork. Take the right fork for 0.35 miles to the forest boundary. From the fence, continue 0.25 miles to a bend in the road in a small drainage. From the road, the 0-foot baseline stake is approximately 65 paces up the drainage. The frequency baseline stakes are marked by green, 18 inch tall fenceposts. The 0-foot baseline stake is marked with a browse tag, #7196.



Map Name: Dry Mountain

Township 1N, Range 6W, Section 13



Diagrammatic Sketch

UTM 4480676.190 N, 541631.574 E

DISCUSSION

Trend Study No. 9-18 (12-7)

The Gooseberry Spring trend study is located on high winter range near Gooseberry Spring on the Ashley National Forest. Elevation is approximately 8,160 feet. The aspect is to the southwest with a slope of 13%. The range type is mixed mountain brush with a strong black sagebrush component. The baseline runs up a small draw which contains a large number of serviceberry, snowberry and mountain big sagebrush. The side hills are drier and dominated by nearly pure stands of black sagebrush. Intense animal use from deer, elk, cattle and possibly domestic sheep was reported in 1982. However, quadrat frequency of deer and elk pellet groups were moderately low in 1995 and 2000. Pellet group transect data taken along the baseline in 2000 estimate 12 deer days use/acre (30 ddu/ha) and 48 elk days use/acre (117 edu/ha). Livestock use was estimated at 7 cow days use/acre (18 cdu/ha). This site is in the Pigeon Water allotment which is grazed by cattle from June 16 to September 25 on a rest-rotation system.

Soils have a clay texture and are variable in depth. Soil depth is relatively shallow on the sides of the draws, increasing in the drainage bottoms. In the draw where the site is located, effective rooting depth is estimated at nearly 15 inches. Phosphorus is low at 4.8 ppm as values less than 10 ppm may be limiting to plant growth and development. Vegetation and litter cover are abundant, although both slightly decreased in 2000. Bare ground increased in 2000, but remains moderately low at 14%. Rock cover is high at 12%. Current erosion levels are not severe, although there is evidence of soil movement and pedestalling is moderate.

The browse composition is diverse, and provides at least 60% of the total vegetative cover in 1995 and 2000. Preferred key species include: mountain big sagebrush, black sagebrush, serviceberry and bitterbrush. Snowberry is also abundant and provides more cover than any other species. These 5 species make up over 90% of the total browse cover on the site. Serviceberry density is estimated at 1,380 plants/acre in 2000, with mature plants making up about 75% of the population. Mature serviceberry average nearly 3 feet in height and crown. They currently ('00) show moderate to heavy use. Vigor is generally good, with the proportion of the population displaying poor vigor increasing to only 6% in 2000. Percent decadency is low at 10%, with high recruitment at 19% (260 plants/acre) in 2000. Average leader growth is low averaging less than 2 inches in 2000 due to drought. Mountain big sagebrush shows a stable population at around 2,400 plants/acre in 1995 and 2000. Mature plants have numbered approximately 2,000 plants/acre during the last 3 readings. In 1995, use was mostly moderate on big sagebrush (60%) with 8% of the population displaying heavy use. Currently ('00), moderate and heavy use have decreased to an estimated 18% and 4% respectively. Twenty-four percent of the population displays poor vigor, an increase from 9% in 1995. Percent decadency is low at 10% and recruitment is good at 13%. Leader growth on big sagebrush is low in 2000, averaging about 3 inches.

Another important browse species is bitterbrush. Bitterbrush density is currently estimated at 420 plants/acre. The population has good vigor and no decadent plants. Moderate and heavy use are currently estimated at 24%, a decrease in moderate use, but an increase in heavy use since 1995. Recruitment increased from 4% in 1995 to 10% in 2000. Leader growth averages about 3 inches in 2000. Black sagebrush has an estimated density of 2,900 plants/acre in 2000, a decrease from 4,360 plants/acre in 1995. This large decrease in population density is due to the difference in young plants between 1995 and 2000. In 1995, 1,200 young plants/acre were estimated, decreasing to only 40 in 2000. In 2000, vigor is mostly good on black sagebrush plants and percent decadency is moderately low at 10%. Although not a preferred forage species, snowberry is abundant and currently ('00) estimated at 4,240 plants/acre. Use is light, vigor good, with no decadent plants being sampled in either 1995 or 2000.

The herbaceous understory is diverse for both grasses and forbs. Dominant grasses are mutton bluegrass and thickspike wheatgrass. Kentucky bluegrass, Sandberg bluegrass, a Carex and prairie junegrass are also present

on the site. Sum of nested frequency of these perennial species decreased by 20% in 2000. Kentucky bluegrass was heavily utilized in 2000. Many forb species are present on the site, yet none are very abundant. Sum of nested frequency of perennial forbs decreased by 53% in 2000 due to drought. Low growing and increaser species are prominent and include: rose pussytoes, desert phlox, fleabane, aster and dandelion. The current forb composition is indicative of many years of heavy grazing on this site.

1982 APPARENT TREND ASSESSMENT

Soil trend appears stable. There is little evidence for any extensive soil movement. Vegetative trend, at least with respect to the browse component, is more questionable. A stable condition may currently exist, but the potential for a decline is present. The area is receiving heavy use over a large part of the year, the effect of which is unclear at present. Careful monitoring of shrub populations should provide some answers in the near future.

1988 TREND ASSESSMENT

Ground cover percentages are fairly constant. Slight increases in vegetative, litter and rock cover led to a decrease in the percentage of bare soil to about 17%. Soil movement is minimal. Browse trend is up. The age structure of snowberry and serviceberry suggest that the populations are increasing. Serviceberry did increase significantly in density since 1982. Eighty percent of the serviceberry were classified as seedlings or young shrubs, as were 71% of the snowberry. The age structure of the sagebrush population has not changed since 1982 and it has declined slightly in numbers. The most significant trend is the reduction in the number of heavily hedged shrubs; down from 21% of the total in 1982 to 3% in 1988. Vigor is apparently improving. Another indicator of a positive trend is the prevalence of young plants in the populations of the key browse species. There is not much sign of recent use by big game. Trend for the herbaceous understory is up with increased frequency for grasses and forbs. A total of 40 species of forbs were encountered in the nested frequency plots, up from 20 species in 1982. Most occur only occasionally, but as a group, the forbs constitute an important source of forage at this high-elevation winter range site. Eaton fleabane, desert phlox, lupine, rock goldenrod, and looseflower milkvetch continue to top the list of the most frequent forbs. The increase in total forb frequency is significant, changing from 169 to 457 occurrences.

TREND ASSESSMENT

soil - stable (3)

browse - up for key species (5)

herbaceous understory - up (5)

1995 TREND ASSESSMENT

Trend for ground cover is slightly improved. Percent bare ground declined to only 7%, down from almost 17%. Percent cover of litter declined, however litter and vegetative cover are adequate to protect the soil surface. Trend for browse is improved slightly for the key species due to reduced heavy use, improved vigor and lower decadency rates. Trend for the herbaceous understory is down for grasses and stable for forbs. Overall, the herbaceous trend is slightly down but will likely rebound with normal precipitation patterns.

TREND ASSESSMENT

soil - up slightly (4)

browse - improved for key species (4)

herbaceous understory - slightly down (2)

2000 TREND ASSESSMENT

Trend for soil is slightly down. Bare ground increased from 7% to 14%, while vegetation and litter cover both slightly decreased. The ratio of protective ground cover (vegetation, litter, and cryptogams) to bare soil decreased as a result of these ground cover changes, but it still remains fairly high at 3.5:1 and erosion is minimal. Trend for browse is stable. The key species all appear to have stable populations and for the most part, good vigor and low decadency. The exception is mountain big sagebrush which has 24% of its population classified as having poor vigor. Recruitment is good for serviceberry, mountain big sagebrush and bitterbrush, but low for black sagebrush. The key browse component on this site appears to be in good condition. It is not showing as many negative changes as some other browse communities on the unit with the dry conditions of this year. Trend for the herbaceous understory is down due to drought. Sum of nested frequency of perennial grasses and forbs declined by 20% and 53% respectively.

TREND ASSESSMENT

soil - slightly down (2)

browse - stable (3)

herbaceous understory - down (1)

HERBACEOUS TRENDS --

Herd unit 09 , Study no: 18

Type	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
G	Agropyron dasystachyum	_b 289	_a 200	_a 195	44	111	78	68	2.40	3.74
G	Agropyron spicatum	-	2	-	-	-	1	-	.03	-
G	Bouteloua gracilis	_b 13	_a -	_a -	-	7	-	-	-	-
G	Bromus anomalus	3	-	4	-	2	-	2	-	.01
G	Carex spp.	_b 99	_b 93	_a 41	18	42	41	17	.35	.65
G	Koeleria cristata	19	18	39	21	11	9	15	.15	1.14
G	Poa fendleriana	_a -	_b 192	_b 205	-	-	66	69	4.03	6.61
G	Poa pratensis	_c 113	_b 76	_a 20	1	51	26	6	1.81	.75
G	Poa secunda	_b 264	_a 67	_a 46	54	87	28	20	.92	.76
G	Sitanion hystrix	-	1	1	1	-	1	-	.00	-
G	Stipa comata	_a 2	_b 27	_a 8	7	1	11	3	.29	.18
G	Stipa lettermani	_b 20	_b 25	_a 2	2	13	9	1	.11	.15
Total for Annual Grasses		0	0	0	0	0	0	0	0	0
Total for Perennial Grasses		822	701	560	148	325	270	201	10.13	14.01
Total for Grasses		822	701	560	148	325	270	201	10.13	14.01
F	Agoseris glauca	_a 3	_b 13	_a -	-	1	6	-	.03	-
F	Allium cernuum	_b 24	_b 17	_a -	-	14	8	-	.07	-
F	Antennaria rosea	_a 1	_b 22	_b 34	-	1	10	11	.22	1.04
F	Arabis spp.	4	2	9	-	3	1	4	.00	.07

T y p e	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
F	<i>Astragalus convallarius</i>	_b 61	_a 34	_a 16	-	30	16	10	.42	.32
F	<i>Astragalus spatulatus</i>	_b 10	_a -	_b 11	-	3	-	4	-	.71
F	<i>Astragalus tenellus</i>	_c 71	_b 29	_a 6	-	38	14	2	.56	.06
F	<i>Aster</i> spp.	39	47	40	3	16	19	20	.35	.25
F	<i>Astragalus</i> spp.	_b 7	_a -	_a -	12	3	-	-	-	-
F	<i>Balsamorhiza hookeri</i>	_b 23	_{ab} 30	_a 7	6	12	12	5	.40	.07
F	<i>Castilleja chromosa</i>	_b 13	_b 20	_a -	4	6	9	-	.26	-
F	<i>Castilleja linariaefolia</i>	_a 4	_b 22	_a 5	-	3	10	2	.18	.03
F	<i>Calochortus nuttallii</i>	_a -	_b 39	_a 1	-	-	17	1	.49	.00
F	<i>Chaenactis douglasii</i>	1	3	3	-	1	2	1	.03	.03
F	<i>Cirsium undulatum</i>	14	9	7	-	8	5	4	.07	.09
F	<i>Collomia linearis</i> (a)	-	_b 27	_a -	-	-	13	-	.16	-
F	<i>Comandra pallida</i>	53	50	27	-	23	22	13	.21	.36
F	<i>Cryptantha</i> spp.	-	-	-	2	-	-	-	-	-
F	<i>Collinsia parviflora</i> (a)	-	35	9	-	-	15	4	.29	.07
F	<i>Crepis acuminata</i>	_a 14	_b 43	_a 9	-	7	23	4	.32	.07
F	<i>Cymopterus</i> spp.	_a 2	_b 57	_a -	-	1	28	-	.16	-
F	<i>Cynoglossum officinale</i>	-	2	-	-	-	1	-	.00	-
F	<i>Eriogonum alatum</i>	7	28	9	-	4	11	5	.10	.07
F	<i>Erigeron eatonii</i>	_c 97	_b 55	_a 13	22	41	22	5	.53	.10
F	<i>Eriogonum umbellatum</i>	5	14	9	2	3	6	3	.27	.09
F	<i>Euphorbia brachycera</i>	1	-	-	2	1	-	-	-	-
F	<i>Geranium richardsonii</i>	-	1	-	-	-	1	-	.03	-
F	<i>Hymenoxys acaulis</i>	_b 24	_{ab} 4	_a 1	-	9	3	1	.06	.03
F	<i>Lesquerella</i> spp.	3	-	-	-	1	-	-	-	-
F	<i>Linum lewisii</i>	3	-	-	-	1	-	-	-	-
F	<i>Lithospermum</i> spp.	_b 14	_{ab} 8	_a 5	-	8	3	2	.01	.03
F	<i>Lupinus argenteus</i>	_b 77	_a 54	_a 56	22	39	26	28	.98	.89
F	<i>Lychnis drummondii</i>	-	5	3	-	-	2	1	.01	.03
F	<i>Lygodesmia grandiflora</i>	-	1	-	-	-	1	-	.01	-
F	<i>Machaeranthera canescens</i>	-	-	4	-	-	-	1	-	.00
F	<i>Orthocarpus luteus</i> (a)	_b 11	_b 23	_a -	2	5	11	-	.17	-
F	<i>Penstemon caespitosus</i>	10	10	7	2	5	6	4	.10	.09
F	<i>Penstemon dolius</i>	_b 8	_b 7	_a -	-	3	4	-	.21	-
F	<i>Penstemon</i> spp.	23	28	-	3	13	13	-	.16	-
F	<i>Penstemon pachyphyllus</i>	-	1	8	-	-	1	3	.01	.21
F	<i>Petradoria pumila</i>	_b 59	_a 24	_a 33	26	28	9	13	.72	.70
F	<i>Phlox austromontana</i>	_b 93	_b 71	_a 34	32	40	27	17	.94	1.39

Type	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
F	Phlox longifolia	_b 53	_b 63	_a 9	8	21	25	4	.22	.09
F	Physaria spp.	-	3	-	-	-	1	-	.00	-
F	Polygonum douglasii (a)	-	16	-	-	-	7	-	.03	-
F	Potentilla gracilis	18	17	7	3	11	11	3	.13	.04
F	Schoenocrambe linifolia	-	3	-	-	-	1	-	.00	-
F	Senecio multilobatus	_b 70	_a 6	_a 5	7	33	2	3	.01	.01
F	Sphaeralcea coccinea	31	20	19	8	13	10	10	.10	.41
F	Taraxacum officinale	16	16	10	-	7	5	5	.05	.07
F	Trifolium gymnocarpon	-	-	3	-	-	-	1	-	.03
F	Viguiera multiflora	3	-	-	3	1	-	-	-	-
F	Zigadenus elegans	-	3	-	-	-	1	-	.00	-
Total for Annual Forbs		11	101	9	0	5	46	4	0.66	0.07
Total for Perennial Forbs		959	881	410	175	452	394	190	8.54	7.45
Total for Forbs		970	982	419	175	457	440	194	9.21	7.52

Values with different subscript letters are significantly different at $\alpha = 0.10$

BROWSE TRENDS --

Herd unit 09 , Study no: 18

Type	Species	Strip Frequency		Average Cover %	
		'95	'00	'95	'00
B	Amelanchier alnifolia	48	51	6.88	6.53
B	Artemisia nova	43	35	4.39	3.34
B	Artemisia tridentata vaseyana	64	67	8.00	6.43
B	Chrysothamnus depressus	4	5	.06	.16
B	Chrysothamnus viscidiflorus lanceolatus	57	44	2.43	1.68
B	Echinocereus spp.	2	1	.01	.03
B	Eriogonum corymbosum	1	0	.15	-
B	Gutierrezia sarothrae	17	17	.18	.16
B	Mahonia repens	1	1	.18	-
B	Purshia tridentata	19	16	2.84	3.32
B	Quercus gambelii	0	1	-	-
B	Ribes cereum cereum	1	0	.03	-
B	Symphoricarpos oreophilus	63	70	11.79	10.39
B	Tetradymia canescens	5	3	.03	.00
Total for Browse		325	311	36.99	32.08

BASIC COVER --

Herd unit 09 , Study no: 18

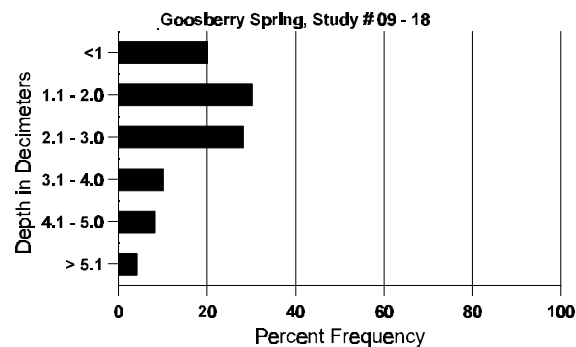
Cover Type	Nested Frequency		Average Cover %			
	'95	'00	'82	'88	'95	'00
Vegetation	356	345	8.50	13.00	50.28	48.70
Rock	196	163	6.50	9.00	11.72	12.62
Pavement	130	144	2.25	4.50	.95	2.19
Litter	390	378	54.75	57.00	48.87	47.49
Cryptogams	4	16	1.75	0	.01	.16
Bare Ground	186	209	25.50	16.50	7.05	14.61

SOIL ANALYSIS DATA --

Herd Unit 09, Study # 18, Study Name: Gooseberry

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
14.61	52.0 (11.47)	7.0	37.9	20.8	41.3	2.2	4.8	240.0	0.8

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 09 , Study no: 18

Type	Quadrat Frequency		Pellet Transect	
	'95	'00	Pellet Groups per Acre	Days Use per Acre (ha)
			'00	'00
Rabbit	2	-	122	N/A
Elk	20	10	618	48 (117)
Deer	12	7	218	17 (41)
Cattle	4	1	87	7 (18)

BROWSE CHARACTERISTICS --

Herd unit 09 , Study no: 18

Amelanchier alnifolia																					
S	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total			
		1	2	3	4	5	6	7	8	9	1	2	3	4							
S	82	-	-	2	-	-	-	-	-	-	2	-	-	-	133			2			
	88	22	-	-	3	-	-	-	-	-	25	-	-	-	1666			25			
	95	1	-	-	1	-	-	-	-	-	2	-	-	-	40			2			
	00	3	-	-	1	-	-	-	-	-	4	-	-	-	80			4			
Y	82	-	1	3	-	-	2	-	-	-	5	1	-	-	400			6			
	88	15	8	6	2	1	-	2	-	-	27	3	3	1	2266			34			
	95	12	3	1	-	-	-	-	-	-	16	-	-	-	320			16			
	00	11	2	-	-	-	-	-	-	-	13	-	-	-	260			13			
M	82	3	4	9	-	5	2	-	-	-	21	2	-	-	1533	45	18	23			
	88	2	3	3	1	-	-	-	2	-	11	-	-	-	733	47	31	11			
	95	16	11	5	4	3	6	-	-	-	45	-	-	-	900	35	41	45			
	00	11	3	15	4	11	4	1	-	-	49	-	-	-	980	33	34	49			
D	82	-	-	2	-	-	-	1	-	-	2	-	1	-	200			3			
	88	-	3	-	1	-	-	-	-	-	4	-	-	-	266			4			
	95	-	-	1	-	-	-	-	-	-	1	-	-	-	20			1			
	00	-	-	2	-	2	3	-	-	-	3	-	-	4	140			7			
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0			
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0			
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1			
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1			
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>							
		'82				31%				56%				03%				+35%			
		'88				31%				18%				08%				-62%			
		'95				27%				21%				00%				+10%			
		'00				26%				35%				06%							
Total Plants/Acre (excluding Dead & Seedlings)												'82	2133	Dec:	9%						
												'88	3265		8%						
												'95	1240		2%						
												'00	1380		10%						

A G E	Y G R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Artemisia nova																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	1	-	-	1	-	-	-	66		1	
	95	-	-	-	10	-	-	-	-	-	10	-	-	-	200		10	
	00	10	-	-	-	-	-	-	-	-	10	-	-	-	200		10	
Y	82	11	1	-	-	-	-	-	-	-	12	-	-	-	800		12	
	88	11	2	-	-	-	-	-	-	-	13	-	-	-	866		13	
	95	54	5	1	-	-	-	-	-	-	60	-	-	-	1200		60	
	00	1	1	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	82	2	11	1	-	-	-	-	-	-	13	-	1	-	933	12 15	14	
	88	4	5	-	1	-	-	-	-	-	10	-	-	-	666	9 14	10	
	95	41	91	10	3	-	-	-	-	-	145	-	-	-	2900	10 21	145	
	00	124	3	-	2	-	-	-	-	-	129	-	-	-	2580	12 20	129	
D	82	1	1	1	-	-	-	-	-	-	1	-	2	-	200		3	
	88	3	1	-	-	-	-	-	-	-	1	-	1	2	266		4	
	95	4	7	2	-	-	-	-	-	-	3	-	-	10	260		13	
	00	13	-	1	-	-	-	-	-	-	9	-	-	5	280		14	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	260		13	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	100		5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'82 45%			07%			10%			- 7%							
		'88 30%			00%			11%			+59%							
		'95 47%			06%			05%			-33%							
		'00 03%			.68%			03%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	1933	Dec:	10%			
												'88	1798		15%			
												'95	4360		6%			
												'00	2900		10%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	3	-	-	-	-	-	-	-	-	-	3	-	-	-	60		3
Y	82	5	2	-	1	-	-	-	-	-	8	-	-	-	533		8	
	88	4	1	-	1	-	-	-	-	-	6	-	-	-	400		6	
	95	2	3	-	1	1	-	-	-	-	7	-	-	-	140		7	
	00	9	3	-	3	-	-	-	-	-	10	-	5	-	300		15	
M	82	17	9	2	-	5	-	-	-	-	30	1	2	-	2200	18 16	33	
	88	23	5	-	-	-	-	-	-	-	27	-	1	-	1866	18 14	28	
	95	29	62	10	2	1	-	-	-	-	98	-	6	-	2080	21 29	104	
	00	73	15	3	-	-	-	-	-	-	72	-	19	-	1820	21 27	91	
D	82	3	4	5	-	-	-	-	-	-	-	-	11	1	800		12	
	88	6	4	1	-	-	-	-	1	-	9	-	3	-	800		12	
	95	3	6	-	1	-	-	-	-	-	5	-	-	5	200		10	
	00	6	3	2	1	-	-	-	-	-	8	-	-	4	240		12	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	60		3	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	240		12	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		38%			13%			26%			-13%							
'88		22%			02%			09%			-21%							
'95		60%			08%			09%			- 2%							
'00		18%			04%			24%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	3533	Dec:	23%			
												'88	3066		26%			
												'95	2420		8%			
												'00	2360		10%			
Chrysothamnus depressus																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	7	-	-	-	-	-	-	-	-	7	-	-	-	466		7	
	95	1	-	-	2	-	-	-	-	-	3	-	-	-	60		3	
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	82	-	-	8	-	-	-	-	-	-	5	-	3	-	533	2 6	8	
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66	4 5	1	
	95	2	-	-	-	-	-	-	-	-	2	-	-	-	40	6 12	2	
	00	8	-	-	-	-	-	-	-	-	8	-	-	-	160	4 9	8	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			100%			38%			- 0%							
'88		00%			00%			00%			-81%							
'95		00%			00%			00%			+44%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	533	Dec:	-			
												'88	532		-			
												'95	100		-			
												'00	180		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus lanceolatus																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	1	-	-	-	-	-	-	-	-	-	-	-	-	66		1	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	82	4	1	2	-	-	-	-	-	-	6	-	1	-	466		7	
	88	69	-	-	-	-	-	1	-	-	70	-	-	-	4666		70	
	95	26	-	-	1	-	-	-	-	-	27	-	-	-	540		27	
	00	32	-	-	-	-	-	-	-	-	32	-	-	-	640		32	
M	82	6	9	37	1	4	-	-	-	-	41	3	13	-	3800	8 12	57	
	88	29	1	-	-	-	-	1	-	-	31	-	-	-	2066	10 12	31	
	95	117	1	-	15	1	-	-	-	-	134	-	-	-	2680	12 13	134	
	00	56	4	2	9	-	1	-	-	-	72	-	-	-	1440	9 10	72	
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	1	-	-	-	-	-	-	-	-	-	-	1	-	66		1	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	1	3	-	-	-	-	-	-	4	-	-	-	80		4	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		22%			61%			22%			+37%							
'88		.98%			00%			.98%			-53%							
'95		01%			00%			00%			-33%							
'00		05%			06%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	4266	Dec:	0%			
												'88	6798		1%			
												'95	3220		0%			
												'00	2160		4%			
Echinocereus spp.																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20	2 4	1	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%			-50%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	40		-			
												'00	20		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Eriogonum corymbosum																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	95	2	-	-	-	-	-	-	-	-	2	-	-	40	7	12	2	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%										
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	40		-			
												'00	0		-			
Gutierrezia sarothrae																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	95	7	-	-	-	-	-	-	-	-	7	-	-	140			7	
	00	2	-	-	-	-	-	-	-	-	2	-	-	40			2	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	95	22	-	-	-	-	-	-	-	-	22	-	-	440	8	10	22	
	00	50	-	-	-	-	-	-	-	-	50	-	-	1000	4	5	50	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	20			1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%			+44%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	580		-			
												'00	1040		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Mahonia repens																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	95	2	-	-	-	-	-	-	-	-	2	-	-	40	5	6	2	
	00	3	-	-	-	-	-	-	-	-	3	-	-	60	-	-	3	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%			+33%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	40		-			
												'00	60		-			
Purshia tridentata																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	-	2	-	-	-	-	-	-	-	2	-	-	133			2	
	95	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
	00	1	-	1	-	-	-	-	-	-	2	-	-	40			2	
M	82	-	-	4	-	-	1	-	-	-	5	-	-	333	13	19	5	
	88	-	-	4	-	-	-	-	-	-	4	-	-	266	17	23	4	
	95	8	6	1	-	9	-	-	-	-	24	-	-	480	16	38	24	
	00	10	3	-	-	2	4	-	-	-	19	-	-	380	19	41	19	
D	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	95	-	1	-	-	-	-	-	-	-	1	-	-	20			1	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			100%			00%			+17%							
'88		33%			67%			00%			+23%							
'95		62%			04%			00%			-19%							
'00		24%			24%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	333	Dec:	0%			
												'88	399		0%			
												'95	520		4%			
												'00	420		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Quercus gambelii																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	00	4	-	-	-	-	-	-	-	-	-	4	-	-	-	80	-	-
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%										
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	0		-			
												'00	80		-			
Ribes cereum cereum																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	-	-	-	1	-	-	-	-	-	1	-	-	-	20	29	52	1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%										
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	20		-			
												'00	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Symphoricarpos oreophilus																		
S	82	6	-	-	-	-	-	-	-	-	6	-	-	-	400		6	
	88	22	-	-	-	-	-	12	-	-	31	-	3	-	2266		34	
	95	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
	00	11	-	-	-	-	-	-	-	-	11	-	-	-	220		11	
Y	82	41	6	-	12	-	-	-	-	-	51	8	-	-	3933		59	
	88	128	6	-	1	-	-	4	-	-	134	-	5	-	9266		139	
	95	71	5	10	6	-	-	-	-	-	92	-	-	-	1840		92	
	00	37	2	-	-	-	-	-	-	-	39	-	-	-	780		39	
M	82	67	55	8	20	-	-	-	-	-	129	17	4	-	10000	19 23	150	
	88	53	3	1	10	-	-	3	-	-	70	-	-	-	4666	18 17	70	
	95	75	40	2	11	-	-	-	-	-	128	-	-	-	2560	16 28	128	
	00	159	-	-	14	-	-	-	-	-	173	-	-	-	3460	15 32	173	
D	82	-	3	-	-	-	-	-	-	-	-	-	3	-	200		3	
	88	1	1	-	-	-	-	-	-	-	1	-	1	-	133		2	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		30%			04%			03%			- 0%							
'88		05%			.47%			03%			-69%							
'95		20%			05%			00%			- 4%							
'00		.94%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	14133	Dec:	1%			
												'88	14065		1%			
												'95	4400		0%			
												'00	4240		0%			
Tetradymia canescens																		
Y	82	-	-	1	-	-	-	-	-	-	1	-	-	-	66		1	
	88	6	-	-	1	-	-	-	-	-	7	-	-	-	466		7	
	95	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0	
	88	2	1	-	-	-	-	-	-	-	3	-	-	-	200	4 3	3	
	95	7	-	-	-	-	-	-	-	-	7	-	-	-	140	9 8	7	
	00	-	-	1	-	-	-	-	-	-	1	-	-	-	20	6 6	1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			100%			00%			+90%							
'88		10%			00%			00%			-64%							
'95		00%			00%			00%			-75%							
'00		00%			33%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	66	Dec:	-			
												'88	666		-			
												'95	240		-			
												'00	60		-			